

THREAD ROLLING DIES APPARATUS FOR A THREAD ROLLING MACHINE
BACKGROUND OF THE INVENTION

1. Field of the Invention

5 The present invention relates to a thread rolling machine,
more particularly, and to a thread rolling dies apparatus
for a thread rolling machine.

2. Description of the Related Art

10 Refer to Fig. 1, the screws 1 usually make many process
which includes a material inspection for cutting an adequate
length of the material 10 and a heating process for forming
a head 12 and a thread rolling process for forming a screw
1 including thread screws 16.

15 Refer to Fig. 2, the thread rolling machine 2 comprises
a base 21 which includes a material 10 proving means 22
for rowing and outputting the material 10 of screw to a
pushing means 24 of a thread rolling dies apparatus 23.
The thread rolling dies apparatus 23 has a second dies 230
opposed to a first dies 232. Refer to Fig. 3, the material
10 proving means 22 takes the material 10 by a transport
20 path 25 and pushes the material 10 from the path 25 by the
pushing means 24 and the same time the second dies 230 is
driven rectilinear motion. The material 10 is pushed by
the pushing means 24 and is driven by the second dies 230
to form screw threads 16.

25 Therefore, the material 10 during the heading process
generates lots of waters, but the wasters could not be

inspected and moved. The wasters after running the thread rolling process could hardly be inspected by a photo-projective inspector because the photo-projective inspector only uses one angle inspection.

5 Further, refer to Fig. 3, when the material 10 is pushed from the path 25 to the second dies 230 by the pushing means 24, the second dies 230 moves rectilinear motion at the same time. Therefore, the material 10 could be inclined twinkling by the push of the front of the path 25 and the
10 second dies 230 resulting in the screw thread 16 inclined. The wasters hardly inspect by the photo-projective inspector.

SUMMARY OF THE INVENTION

15 It is an object of the present invention to provide a thread rolling dies apparatus for a thread rolling machine which could decrease the fail off rate and enhance the quality of the product.

To achieve the above mention of the advantages, the
20 present invention discloses a thread rolling dies apparatus for a thread rolling machine which comprises a first dies and a second dies being driven rectilinear motion. Between the first and second dies have a positioning channel which includes an inspective means, and the inspective means
25 comprises an insulate layer deposited on the bottom and a sensitive member deposed on the insulate layer and an

alert driving member electrically connecting to the sensitive member. Therefore, the present invention makes the wasters of inclined head of screw touching the sensitive member resulting in the alert driving member generating the warning to decrease the fail off rate and enhance the quality of the product.

It is to be understood that both the foregoing general description and the following detailed description are exemplary, and are intended to provide further explanation of the invention as claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawing is included to provide a further understanding of the invention, and is incorporated in and constitutes a part of this specification. The drawing illustrates an embodiment of the invention and, together with the description, serves to explain the principles of the invention. In the drawing,

Fig. 1 is an illustrated view showing the screw forming process of the prior art;

Fig. 2 is an illustrated view showing the thread rolling machine of the prior art;

Fig. 3 is an illustrated view showing the thread rolling process of the thread rolling machine of the prior art;

Fig. 4 is an illustrated view showing the thread rolling apparatus of the present invention;

Fig. 5 is an illustrated view showing the thread rolling

process of the thread rolling apparatus of the present invention;

Fig. 6 is an illustrated view showing the inclined head touching the inspective member of the thread rolling apparatus of the present invention;

Fig. 7 is an illustrated view showing the thread rolling process of the thread rolling apparatus of another embodiment of the present invention; and

Fig. 8 is schematic view showing the inspective member of the thread rolling apparatus of another embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Reference will now be made in detail to the preferred embodiments of the present invention, examples of which are illustrated in the accompanying drawings. Wherever possible, the same reference numbers are used in the drawings and the description to refer to the same or like parts.

Refer to Figs. 4 and 5, a thread rolling apparatus 3 of the present invention is deposited on a thread rolling machine and comprises a first dies 30 and a second dies 32 being driven rectilinear motion. The first dies 30 and second dies 32 parallelize, and between them have a path 34 and individually have a thread rolling planes 300, 320. The planes 300, 320 have threads 302, 322 for forming a thread screw and oppose to each other. A top 304 of the first dies 30 closing to an end of the path 34 has

a positioning channel 306 which includes an inspective means 6. Further, the inspective means 6 includes an insulate layer 60 of the bottom of the channel 306, a sensitive member 62 deposited on the insulate layer 60 and an alert driving member 64 electrically connected to the sensitive member 62. And, the sensitive member 62 deposes the position of lower of the top 304 of the first dies 30.

Refer to Fig. 5, when the first and second dieses 30, 32 work, the material 5 rows and outputs from a transport means 42 and is pushed to the path 34 by a pushing means 44. The material 5 is controlled by the first dies 30 and the second dies 32 moved to make the head 50 of the screw placing the top of the channel 306. If the head 50 originally inclines or the material 5 transports from the transport means 42 to the path 34 resulting in the head 50 being inclined, all the factors could effect the screw thread 51 generated. The threads 302, 322 of the first and second dieses 30, 32 display the design of the getting deeper. The screw thread 51 is formed by the thread rolling process. If the head of the material 5 is inclined, the head 50 could not glide on the first and second dieses 30, 32 till the inclined head 50 glides to the channel 306. Refer to Fig. 6, the inclined head 50 could touch the inspective member 6 connecting to the alert driving member 64 (refer to Fig. 5) to inform the worker, because the channel 306 is lower than the top 304 of the first dies 302. The worker would stop the thread rolling machine 4 to moving the wasters.

If the heat 50 is not inclined, the material 5 is made a screw thread in the path 34 by the second dies 32 continuously operated and matching with the first dies 30. So, none of the head touches the sensitive member 62 in the channel 306 making the thread rolling process to continuously operate.

Refer to Fig. 7, another embodiment of the present invention, the thread rolling apparatus 3 comprises a first dies 30 and a second dies 32. The top 326 of the second dies 32 has a positioning channel 324 closing the end of a material in a thread rolling process, and the channel 324 comprises an inspective means 6 that comprises an insulated layer 60, which includes a sensitive member 62 and an alert driving member 64 electrically connects to the sensitive member 62, on the bottom, and the sensitive member 62 is lower than the top 326 of the second dies 32. Using the inspective member 6 inspects the wasters during the thread rolling process.

Refer to Fig. 8, the structures of the first and second dies 30, 32 are the same as the above embodiment, and discloses the different position of the inspective member 6. The thread rolling apparatus 3 comprises the first and second dies 30, 32 which individually and oppositely form threads 302, 322. Further, each the thread 302, 322 has an inspective member 6. When the thread rolling apparatus 3 works, the inspective member 6 could be selected one to use. The position of the inspective member 6 is deposited that closes

the end of the path or closes the end of a material in a thread rolling process. The advantage of the embodiment of the present invention provides the inspective member 6 on the first or second dies 30, 32, which could be changed to enhance the life of the thread rolling apparatus 3.

The thread rolling apparatus of the present invention discloses a positioning channel formed between a first and second dies, and using a sensitive member placed in the channel and lower than the top of the channel touches with an alert driving member to make the thread rolling machine stopped when the inclined head is generated. The present invention could inspect the wasters after the head rolling process to effectively decrease the fail off rate and enhance the quality of the product. Further, the present invention eliminates the inspection of the inspective plain finish Products, micro sorting, and visual sorting.

Therefore, the foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.